Date: Sat, 12 Jun 93 19:08:48 PDT
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V93 #720
To: Info-Hams

Info-Hams Digest Sat, 12 Jun 93 Volume 93 : Issue 720

Today's Topics:

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Sat, 12 Jun 1993 16:09:24 GMT
From: usc!howland.reston.ans.net!europa.eng.gtefsd.com!emory!kd4nc!ke4zv!
gary@network.UCSD.EDU
Subject: AM Broadcast Radio Antenna
To: info-hams@ucsd.edu

In article <1993Jun11.142106.22095@hemlock.cray.com> n3022@cray.com writes:
>Anyone have an idea on how to construct an
>AM broadcast radio antenna to pick up stations
>in an office building. I know the main problems
>are interference from flourescent lights and shielding
>from radio waves. Any and all suggestions are welcome.

Jim, the main problems are the shielding of the metal shell,
and as you noted, the electrical interference from lights,
computers, and other electrical equipment. The only practical
solution is an outside antenna. If you don't mind the appearance,
an auto broadcast radio salvaged from a junkyard, along with it's
antenna, will work fine if you locate the antenna outside the
shell of the building. These radios are better designed to deal
with harsh RF environments than the normal table model radio,
and they're already equipped to use an outside antenna. Not
to mention you can get a nice one for about $15. If you're
handy, you can build it, and a 12 volt power supply into a
speaker cabinet and everyone will oooh and aaah over your
pushbutton table radio. I use one in my shop which is a
metal building.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

Date: Sun, 13 Jun 1993 01:18:48 GMT
From: usc!howland.reston.ans.net!noc.near.net!lynx!random.ccs.northeastern.edu!
bungles@network.UCSD.EDU
Subject: ARRL Insurance?
To: info-hams@ucsd.edu

Could someone give me information about insurance offered by ARRL. What type
of coverage and what are the fees?

73's
Michael

Date: Sat, 12 Jun 1993 16:02:00 GMT
From: usc!howland.reston.ans.net!europa.eng.gtefsd.com!emory!kd4nc!ke4zv!
gary@network.UCSD.EDU
Subject: Digital microwave project
To: info-hams@ucsd.edu

In article <C8FqJs.1Hr@zeno.fit.edu> ree88132@zach.fit.edu (Keith Ledig) writes:
>I am about to embark on a project that envolves the use of microwaves
>to transfer digital data. Not being very experienced in microwave

>technology I have a few questions to ask the microwave gurus. First,
>a little background: This project will link two computers together
>through their serial ports at initially 9600 baud but later at speeds
>of up to 115K baud. The eventual goal is to use SLIP through this
>connection to get onto the network. The distance will be approx.
>10 to 15 miles.
>
>1. Where is a good place to get cheap microwave components from?

Hamfests, fleamarkets, the dumpsters of phone companies, TV stations,
and the power company are the cheapest sources. Advanced Receiver
Research sells new 10 GHz and 24 GHz Gunnplexers, but I wouldn't
call them cheap, about $400 for 10 milliwatts.

>2. What frequencies can be used for this microwave link? HAM?

Naturally, microwave links use microwave frequencies, duh. For
speeds from 1200 to 56 kilobaud, any ham band above 222 MHz will
do. That's UHF. For speeds greater than 56 kb, any ham band above
450 MHz will do. Commercial terrestrial links are generally found
in the 4-7 GHz range.

>   Are there allocated frequencies for such experimentation and
>   do they require a license?

All the bands, except the 900 MHz Part 15 band require licenses, and
it's limits aren't suitable for your project. Naturally the ham bands
require a ham license. Most of the commercial frequencies are in heavy
use. You have to go through a coordinating body to get an allocation
approved before the FCC will consider a license in the commercial services.
This can be expensive and time consuming. An experimental license is less
restrictive, but one will be issued only "for cause" by the Commission.
You have to give them a written proposal detailing the types of
experiments you intend to undertake. If they consider it interesting,
and if they agree that no other type of license is suitable, they'll
issue you an experimental license, but the burden is on you not to
interfere with any other licensed user.

>3. If I want full duplex, do I need 2 antennas at each end or can
>   one serve as a bidirectional with 2 separate frequencies used?
>4. Can one antenna be used to transmit AND receive (related to question
>   3 and 5).

It depends on the type of feed system you use, and on whether you wish
to operate split frequency or not. Split frequency operation is common
in amateur use, the dish doesn't care, and the feed doesn't care as
long as the two frequencies are in the same band. Commercial practice
is usually to operate on the same frequency, but with different polarization.

Satellite systems operate this way with half the transponders running vertical polarization, and the other half on the same frequencies but horizontally polarized. Left and right hand circular polarization can also be used. A single feed can be used for both polarizations by suitable design. You can use two dishes and two feeds on two different frequencies if you wish, but it's inefficient to do so.

>5. Which antenna do I use? Horn? Dish? (related to question 2 about
>   frequency).

For your application, a dish is preferred. Practical horns with more than 17 db of gain are difficult to manage mechanically. Doing cross polarization with a single pyramidal horn is also tricky. You'll likely want to use a sector feed at the focus of a dish.

>6. Has this been done before with personal/amateur setup?

Sure. See the 1993 ARRL Handbook, or one of the Computer Networking Conference Proceedings, also available from the ARRL.

>7. Where can I find out more info on this stuff?

See above, and also the RSGB microwave books will be useful for the RF part of setting up the link.

>8. What security considerations are necessary? I will probably want
>   to encrypt/scramble so eavesdroppers can't get system passwords etc.
>   Is there data encryption on a chip available?

Encryption is illegal on the amateur bands, but it's fine on commercial links. DES chipsets are available, but there are better, and cheaper, ways of insuring communications privacy. On the cheaper end, a simple data scrambler using a tapped shift register should supply the minimal security you probably really need when coupled with the tight beam point to point nature of your link. On the high end are certain public key systems that the government doesn't like because even they can't break them. This can be implemented in software, so your hardware costs can be kept to a minimum.

>9. Is it feasable to use data compression or correction like v.42 and
>   v.42bis? I have seen it on a chip but have never used it before.
>   Are these chips very expensive? Is there a real easy way to error
>   correct that's cheap?

KA9Q has an experimental forward error correction scheme for NOS that he writes about in this month's QEX. It requires no special hardware other than a 33 MHz 486 host to implement at 56 kb. There are dedicated chipsets available as well, but they aren't cheap yet.

>10. Since I'll be using SLIP at my end I guess the other end can be hooked
>   up to any machine on the network? (ie. a SUN, but what about an
>   IBM PC or Amiga that is not running UNIX?)

Run the appropriate KA9Q NOS varient for the platform. There are versions
for PCs, Mac, Amiga, and who knows what else floating around. This is a
good plan for interoperating with any network since NOS can switch packets
from radio, wireline, or ethernet at will. The Telebit Netblazer is nothing
more than a customized PC running a hacked version of NOS.

>I know this sounds really complicated but that's why I want to do this.
>Plus it can be very useful, but I don't have too many high hopes on getting
>on the network because of the network administrators security concerns.

This isn't that complicated, some of us are interconnecting networks
with this technology today. 56 kb RF modem kits are available from
GRAPES, 19.2 kb radio links are available from Kantronics, and 9600
baud links are available from a number of sources. Commercial T1
rate microwave equipment is also available from a number of vendors,
or you can try the system described in the Handbook. 15 mile line of
sight microwave paths are duck soup. Even an eye safe laser and a
6 inch telescope would be suitable for the task, and lightwave
communications is still license free.

Gary
--

Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

Date: 12 Jun 93 17:13:48 GMT
From: news-mail-gateway@ucsd.edu
Subject: Digital microwave project (you'll be sorry...)
To: info-hams@ucsd.edu

>>Are you typical of the student body at Florida Institute of Technology?
>>Take you school project else where. We don't do your homework for you in
>>this news group.

Ah, yes. FIT. The Florida Institute of Technology - the school that's
changing it's name to "Florida Tech" so they won't be confused with another
FIT that's supposed to be in NY and supposed to be the "Fashion Institute of
Technology". Of course, people now think Florida Tech is a subsidiary of ITT
Tech (vocational education) instead of Cal Tech or MIT.

This is also the place where the school teams were the "Engineers" and changed them to the "Panthers" to be unique (i think FL now has an Ice Hockey team called the Panthers and Panther was already in use by others in the state.).

I live across the street from this place. It's kinda like "The Burbs" - that Tom Hanks movie from a few years ago & I'm the next door neighbor.
Do what I can for the campus radio station (WFIT) and we hold amateur radio exams on campus as well. By and large, the school admin folks seem bent on "negatives" and not building pride in the school. I don't understand a lot of what goes on there at all.

Right now we're getting lots and lots of advertising about how it's not too late to sign up to be in the freshman class of "Florida Tech" featuring radio commercials with an unnamed announcer and that "E equals M C Two Guy", Albert whatsisname. "Boy, you're pretty smart - no wonder they call you Einstein!"

One rumor is Admissions saved money on postage this year by not
mailing out info on the school unless they got a postpaid return envelope resulting in a really low freshman class enrollment for 1993/1994 school year. (It's not called "America's SPACED Coast" for nothing! i'd say HS junior/seniors should check out Rose-Hulman in Terre Haute but I'm biased 8). Although I don't hold anything against Purdue grads - nice bowling alley in the student union & us Hoosiers have to stick together.).

>>
>This is not "homework". This is a project that I have initiated
>and can be more accurately characterized as "research".
>>In article <C8FqJs.1Hr@zeno.fit.edu>, ree88132@zach.fit.edu (Keith Ledig)
>>wrote:
>>>
>...
>>> 1. Where is a good place to get cheap microwave components from?
>>> 2. What frequencies can be used for this microwave link?

Keith probably needs to check in at the FIT Amateur Radio Society in Room Q-12. I believe Eric KD4CRC was graduated today - you might want to call Dr. Cofer (club faculty advisor) or call the ham shack at 768-8000 x 8149 and leave a message (and you get my phone number off that tape..lucky you). Probably Tim (KI4TG) will get back to you.

A couple of years ago Victor Lau (N4FUY), Tim Madden (KI4TG), and Steve Hall (KK4PM) along with Dr. Bob Burton (AA4QA) were working on a microwave communications system but it was for split siting the repeater. Victor and Steve were doing this because they had some surplus garage door opener transmitters and receivers. A prototype was completed and then Victor and Steve were graduated, Dr. Bob was busy with his business, and Tim had to attend to other matters so that's as far at that project got.

I seem to recall Dr. Nunn being the resident microwave expert at FIT, but could be wrong on that.

One of the senior projects this year was to build a repeater controller for the 146.85 repeater (that club has since bought a commercial controller) but i haven't had a chance to talk to those involved for a while so i don't know how that came out as well.

Keith - do you know about Astro and Astro Too? or Skycraft Surplus in Orlando?

73, bill wb9ivr

Date: 12 Jun 1993 13:23:19 -0400
From: usc!howland.reston.ans.net!gatech!concert!news-feed-1.peachnet.edu!bogus.sura.net!udel!news.intercon.com!panix!not-for-mail@network.UCSD.EDU
Subject: I got the ticket today!
To: info-hams@ucsd.edu

I took the exam on 22 April and received the license today -- 7 weeks and two days!

73

--

 See the happy moron, ...
 He doesn't give a damn, .. Clay Irving   personal: clay@panix.com   ..
 I wish I were a moron,   .. New York, NY   work: clay@garpac.com   ..
 My God! perhaps I am!   ....

Date: Sat, 12 Jun 1993 20:30:23 GMT
From: swrinde!gatech!usenet.ins.cwru.edu!howland.reston.ans.net!noc.near.net!lynx!random.ccs.northeastern.edu!bungles@network.UCSD.EDU
Subject: I got the ticket today!
To: info-hams@ucsd.edu

In article <1vd3e7$p2j@sun.Panix.Com> clay@panix.com (Clay Irving) writes:
>I took the exam on 22 April and received the license today -- 7 weeks and
>two days!
>
>73
>
>--

> See the happy moron, ...
> He doesn't give a damn, .. Clay Irving   personal: clay@panix.com   ..
> I wish I were a moron,   .. New York, NY   work: clay@garpac.com   ..
> My God! perhaps I am!   ....

I took the exam today June 12th...hope I receive the same speedy service ;-)

73's
Michael

Date: 12 Jun 1993 20:22:59 GMT
From: usc!howland.reston.ans.net!usenet.ins.cwru.edu!cleveland.Freenet.Edu!de786@network.UCSD.EDU
Subject: Looking for a GPS receiver -- Recommendations?
To: info-hams@ucsd.edu

I recomend the GPS-85 MIL ($1800) from Garmin International,9875 Widmer Rd., Lenexa,Ks. (913)599-1515 for a poratable with graphics capabilities.Graphics guide users through navigational functions on the screen.The plotting mode also provides visuals;waypoints can be identified and selected.The unit is capable of storing 500 waypoints and 20 reversible routes with 30 waypoints each.

Date: 12 Jun 93 22:56:20 GMT
From: news-mail-gateway@ucsd.edu
Subject: Needing help on Manual
To: info-hams@ucsd.edu

the following request is being forwarded to this list for assistance.

Tim Wright KD4OVM

WRIGHT@morekypr.BITNET

Start here ----------

Received: from UKCC.UKY.EDU (NJE origin LISTSERV@UKCC) by UKCC.UKY.EDU (LMail V1.1d/1.7f) with BSMTP id 4047; Sat, 12 Jun 1993 10:23:58 -0400
Date: Sat, 12 Jun 1993 09:22:47 -0500
Reply-To: University of Kentucky Amateur Radio Club <UKARC@UKCC.BITNET>
Sender: University of Kentucky Amateur Radio Club <UKARC@UKCC.BITNET>
From: 00hlcaldwell@BSUVAX1.BITNET
Subject: Antique Radios
To: Multiple recipients of list UKARC <UKARC@UKCC.BITNET>

Friends:
        Please pardon this intrustion on your list from a non-member,
but I thought perhaps you would not mind if I ask for assistance in
locating a discussion group or printed sources on antique radios. I have
been unsuccessful in finding any information on my cabinet model
Stromberg-Carlson (AM and SW), and I am most interested in learning
more about the operation and care of this wonderful piece.
        Since I am not a member of this discussion group, you will need
to contact me privately at one of the addresses below. Many thanks for
your kind assistance.
                                Hal Caldwell

=-=
Dr. Harold (Hal) Caldwell | Coordinator
00hlcaldwell@BSUVAX1.BITNET | Arts and Communications Advising Center
00hlcaldwell@BSUVC.BSU.EDU | 210 Arts and Communications Building
Owner, ACADV Network | Ball State University
Telephone (317) 285-8686 | Muncie, Indiana 47306-0165   USA
=-=

END HERE_____________________-------------------------------------___________

If someone could help the good Doctor????

Tim KD4OVM

Date: Sun, 13 Jun 1993 01:03:57 GMT
From: rit!isc-newsserver!ultb!bad1679@cs.rochester.edu
Subject: New Radio Shack HT???
To: info-hams@ucsd.edu

Hi Everyone,

Several weeks I heard from a local Radio Shack Sales Rep that they would
be comming out with a new Ham Radio Product. Today I stoped by
Radio Shack again and was told it would be an ht in the $300 range,
perhaps a dual/tribander to be released in August.

Does anyone have any confirmed / concrete information on this new
product? Specs? Bands of Operation?

73

Bernie Nu1S
--

Electrical Engineering, Rochester Institute of Technology, Rochester,NY
Ax25 Packet: NU1S @ WB2PSI.#WNY.NY.USA.NOAM (normal packet route)
TCP/IP: nu1s@nu1s.ampr.org [44.69.0.37]
Internet (school): bad1679@ultb.isc.rit.edu

Date: Sat, 12 Jun 1993 23:48:43 GMT
From: sdd.hp.com!math.ohio-state.edu!magnus.acs.ohio-state.edu!
usenet.ins.cwru.edu!neoucom.edu!wtm@network.UCSD.EDU
Subject: Vertical Antenna Alternatives?
To: info-hams@ucsd.edu

I have a GAP Eagle-VI vertical antenna that covers 40m -- 10m. I'm running barefoot from a Kenwood TS-440S/AT with 120 feet of RG-8 transmission line. The approximate maximum input power on the '440 is about 100 watts.

The SWR on the Eagle-VI is resonably flat in all the bands in which the antenna is intended to work. I feel that the usable bandwidth is better than either a Butternut or an AR-5 without use of the antenna tuner; with tuner it is less of an issue.

I am somewhat of a DX neophyte, but haven't had any trouble being heard in pile-ups to Vienna, Austria or new OMxxx calls in Slovakia.

I'm still trying to figure out just how the GAP antenna works. The Eagle-VI appears to be essentially a 22 foot long vertical dipole there is a coaxial stub that is about 10 feet long inside the antenna as well as a coaxial feed whose center conductor is attached to the very top of the antenna. The TX feed, stub, and co-ax to the top all connect in some fashion to the center of the vertical. There are a number of parallel tuning rods that ultimately attach electrically to the center feed point. The bottom of the antenna decouples from the feedline by use of so-called counterpoises about 8 feet long. Orientation of the counterpoise rods does not have to be symetrical (there are 3 rods). This allows the antenna to be installed in just about any location, even an apartment balcony. I worked Slovakia with my antenna just leaning up against the house while testing it out before permanantly installing (on 14.191 MHz).

Everything is pre-cut to length on the Eagle-VI. This makes assembly pretty easy. The illustration in the instruction booklet could be a little more clear, but it isn't too bad. It took me about an hour to assemble. All hardware is either stainless steel or aluminum. About the only thing I did that was not in the manual

was to solder the lugs on the jumper wires in additon to the simple crimp that had been done at the factory. The GAP antenna proved considerably easier to get going than a trap vertical the likes of a Butternut. Of course, the convenience of the GAP antennas comes at a higher purchase price, unless you're talking about something like a Cushcraft R-5 trap vertical. I'd still rather have the GAP after having lived with it for a while. One thing to watch out for is that the bigger GAP antennas really should be augmented by guy ropes to enhance wind survivability. About the only "complaint" I have is that local ground wave propagation isn't fantastic, but that isn't surprising. None the less, the Eagle works pretty nicely on the local 10-FM ragchew net with a 15-20 mile radius.

The best of all, naturally, is a rotable beam antenna.

Bill

--
Bill Mayhew NEOUCOM Computer Services Department
Rootstown, OH 44272-9995 USA phone: 216-325-2511
wtm@uhura.neoucom.edu amateur radio 146.58: N8WED/AA

Date: Sat, 12 Jun 1993 18:48:33 GMT
From: swrinde!gatech!kd4nc!n4tii@network.UCSD.EDU
Subject: WANTED FT-101ZD, Radios in movies
To: info-hams@ucsd.edu

root@jackatak.raider.net (Jack GF Hill) writes:

>turner@safety.ics.uci.edu (Clark Savage Turner) writes:
>> In <6569@gold.gvg.tek.com> randyh@gvgadg.gvg.tek.com (Randy Hall) writes:
>> ....
>> >oh, I know that the FT101ZD can work 2 meters, I saw done in the movie
>> >Cliffhanger!!
>>
>> That brings up an interesting note....I have seen ham radio equipment in
>> a number of movies. I wonder if others keep track:
>>
>> The Anderson Tapes - saw the kid use an HW-101 to get help.
>> The Godzilla movies (forget which one) - saw a Yaesu FTdx 560 used as
>> part of a "death ray" weapon.
>> Buckaroo Banzai - this little kid keeps in touch with Buckaroo with a Kenwood
>> TS-520.
>"K2" uses an ICOM, probably a 275, for mountaqin to base
>communications, with HTs, again I'd guess Icom for climber units.

>My mind just went blank, and I had a half a dozen to add! Ah well, age
>will do that! ;^)

Nope....In K2, that was a Yeasu FT-747 (or its commercial equivalent) HF rig.
Look again.... (I never got a good look at the HT's, but if the HF was yeasu,
they were probably yeasu, too.

John
n4tii@kd4nc.uucp@gatech.edu

>73
>Jack

>+--*--+
>| Jack GF Hill |Voice: (615) 459-2636 -   Ham Call: W4PPT |
>| P. O. Box 1685 |Modem: (615) 377-5980 - Bicycling and SCUBA Diving |
>| Brentwood, TN 37024|Fax: (615) 459-0038 -   Life Member - ARRL |
>| root@jackatak.raider.net   -   "Plus ca chnagez, plus ca la meme chose" |
>+--*--+

Date: Sat, 12 Jun 1993 21:14:29 GMT
From: ftpbox!mothost!white!rtsg.mot.com!rtsg.mot.com!rundllpj@uunet.uu.net
To: info-hams@ucsd.edu

References <1993May17.143845.23268@hemlock.cray.com>,
<C7C1zw.32t@pacifier.rain.com>, <2321@indep1.UUCP>A
Subject : Re: BUY BACK 11 METERS! (was Re: Selling t

In article <2321@indep1.UUCP>, clifto@indep1.UUCP (Cliff Sharp) writes:
|> In article <C7C1zw.32t@pacifier.rain.com> mikef@pacifier.rain.com (Mike
Freeman) writes:
|> >Hell, let's just buy 'em all. While we're at it, we could buy
|> >the portions of the spectrum we already are entitled to. that
|> >way, we could guarantee their use by amateurs in perpetuity :-) :-) :-)!
|>
|>   The way I figger it, that would cost about $200,000,000, bidding against
|> competitors like Motorola and their ilk. There's about 400,000 hams (to pick
|> a round number, though a low one) right now. If we all chip in, might be
|> doable.
|>   Send your $500 to my callbook address and I'll start the fund. :-)
|> | Cliff Sharp | clifto@indep1.chi.il.us   OR clifto@indep1.uucp
|

I'm sorry - I guess I missed where _Motorola_ bought spectrum hams were using. Perhaps Mr. Sharp in his infinite wisdom (the way he "figgers" it) could point us to some facts to accompany his sarcastic backstab of Motorola.

Speaking purely as a concerned ham - not for Motorola or the industry.

Pat Rundall WZ0H
Electrical Engineer, RF Planning/System Integration and Test Department
Cellular Infrastructure Group, Motorola Digital Cellular - GSM
Motorola Inc.

Date: Sat, 12 Jun 1993 20:17:49 GMT
From: usc!elroy.jpl.nasa.gov!news.claremont.edu!jarthur.claremont.edu!aross@network.UCSD.EDU
To: info-hams@ucsd.edu

References <130431@netnews.upenn.edu>, <1v7bot$bds@jericho.mc.com>, <1v7n08$mt@gopher.cs.uofs.edu>s
Subject : Re: The ITU phonetic alphabet

How about
o-> Oedipus
s-> Szilard

End of Info-Hams Digest V93 #720
****